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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/322,289	05/28/99	SCHENK D	15270-004740

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EXAMINER	
TURNER, S	

ART UNIT	PAPER NUMBER
1647	19

DATE MAILED: 06/19/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/322,289	Schenk
Examiner	**Art Unit**
Sharon L. Turner, Ph.D.	1647

-- The MAILING DATE of this communication appears on th cov r sh et with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 4-5-01

2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-55 is/are pending in the applica

4a) Of the above, claim(s) 25-28 and 33-55 is/are withdrawn from considera

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-24 and 29-32 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☒ Claims 1-55 are subject to restriction and/or election requirem

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 7-9, 11

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

19) ☐ Notice of Informal Patent Application (PTO-152)

20) ☐ Other:

DETAILED ACTION

1. The amendment to the specification filed Dec. 13, 2000 has now been entered into the record. Applicants response to the notice to comply filed 4-6-01 has been entered to the record.

Information Disclosure Statement

2. The IDS submissions have been considered to the extent as indicated on the attached 1449s. The examiner notes that some of the references are in improper format or have been separated from the file. Applicants are requested to supply the absent information and references or to present the post-card receipt for such filing in the next communication.

Election/Restriction

3. Applicant's election with traverse of Group I, claims 1-24 and 29-32, species A drawn to Aβ in Paper No. 14 is acknowledged. The traversal is on the ground(s) that the species are nonmutually exclusive. This is not found persuasive because while antibody cross-reactivity is well known, the specific antibodies recited for example in claims 25-28 may be generated via different peptide structures which results in alternative immunoreactivity, i.e., the recognition of distinct epitopes. Thus, while some antibodies may cross react, the antibodies as recited in the nonelected claims are different and are capable of different use, i.e., they are patentably distinct. Accordingly the species are in fact mutually exclusive and capable of separable use. It is also true that a search of antibodies to a single recited epitope would not necessarily reveal antibodies reactive to an alternative epitope, and thus the searches are not co-inclusive even to the generic recitation as recited in the claims, i.e., an antibody which binds Aβ may or may not recognize the

recited epitope. For these reasons, the requirement is still deemed proper and is therefore made FINAL.

4. Claims 25-28 and 33-55 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 14.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-24 and 29-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "to the patient" in reference to an antibody that specifically binds to the amyloid deposit or a component thereof. The phrase is nonsensical as to what is bound "to the patient." The examiner suggests applicants may have wished to recite "in the patient." Clarification is required.

Claim 30 is indefinite as the claim lacks reference to a parent claim. For the purposes of examination the examiner presumes applicants intent was for the claim to depend from claim 29.

Claim 32 recites the limitation "the agent" which lacks antecedent basis in parent claim 1.

Claim Rejections - 35 USC § 102 or 103

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

8. Claims 1-21, 24 and 29-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Nettleship et al., EP 613007, Aug. 31, 1994.

Nettleship et al., teach antibodies useful in the diagnosis and treatment of mammals suffering from Alzheimer's Disease, see in particular column 7, line 39- column 8, line 18. The antibodies are beta-amyloid peptides, particularly in beta-sheet conformation, but also include antibodies to alternative fragments, see in particular column 1, line 52-column 2, line 56. It is understood that the functional embodiment which characterizes the diagnostic and therapeutic relationship as disclosed in Nettleship hinges on the binding of the antibodies to the beta-amyloid peptides, see in particular reference in paragraph spanning columns 7-8 and reference to numerous assay systems suitable to detect agents which bind, column 8, lines 6-15. In addition, the compositions are pharmaceutical compositions which include formulations for parenteral administration (other than by intestinal, i.e., subcutaneous, intravenous, etc., as understood by the skilled artisan), see in particular column 8, lines 19-42. Thus, the reference appears to be

enabling for the determination of appropriate doses and routes of administration suitable for such binding to occur. Nettleship et al., teach the use of alternatively produced Aβ antibodies including to peptides which have adopted a random coil or alpha-helix conformation and to antibodies which are genetically engineered, antibody fragments, chimeric antibodies, recombinantly produced antibodies, and "humanized or murinized" antibodies as generated by replacement of CDR regions, see in particular column 5, lines 42-column 6, line 20. Thus the reference teaches the variable antibodies of claims 1 and 9-21. It is noted that the polyclonal sera would inherently include multiple antibodies and Ig isotypes. It is further noted that the patient population includes mammals and thus would encompass humans of various risk factors, symptoms and ages as recited in claims 2-8. Thus, the reference teachings anticipate the claimed invention. It is noted that claims 29-31 recite

9. Claims 1, 9, 13, 15, 20, 22-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Friedland et al., Mol. Neurobiol., 9(1-3):107-113.

Friedland et al., teach in vivo administration to mice of murine monoclonal antibody 10H3 which recognizes beta amyloid at the dosage of 10 ug to a mouse. This quantity correlates to at least 10 mg/kg body weight based on an average mouse weight of 10 g. Fab fragments were labeled with 99mTc for visualization and biodistribution was studied, see in particular Figures 1-2. Thus, the reference teachings anticipate the claimed invention.

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-24 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nettleship et al., EP 613007, Aug. 31, 1994.

Nettleship et al., teach antibodies useful in the diagnosis and treatment of mammals suffering from Alzheimer's Disease, see in particular column 7, line 39- column 8, line 18. The antibodies are beta-amyloid peptides, particularly in beta-sheet conformation, but also include antibodies to alternative fragments, see in particular column 1, line 52-column 2, line 56. It is understood that the functional embodiment which characterizes the diagnostic and therapeutic relationship as disclosed in Nettleship hinges on the binding of the antibodies to the beta-amyloid peptides, see in particular reference in paragraph spanning columns 7-8 and reference to numerous assay systems suitable to detect agents which bind, column 8, lines 6-15. In addition, the compositions are pharmaceutical compositions which include formulations for parenteral

administration (other than by intestinal, i.e., subcutaneous, intravenous, etc., as understood by the skilled artisan), see in particular column 8, lines 19-42. Thus, the reference appears to be enabling for the determination of appropriate doses and routes of administration suitable for such binding to occur. Such would thus render obvious to the skilled artisan the dosage recitations of claims 22-23. Nettleship et al., teach the use of alternatively produced Aβ antibodies including to peptides which have adopted a random coil or alpha-helix conformation and to antibodies which are genetically engineered, antibody fragments, chimeric antibodies, recombinantly produced antibodies, and "humanized or murinized" antibodies as generated by replacement of CDR regions, see in particular column 5, lines 42-column 6, line 20. Thus the reference teaches the variable antibodies of claims 1 and 9-21. It is noted that the polyclonal sera would inherently include multiple antibodies and Ig isotypes. It is further noted that the patient population includes mammals and thus would encompass humans of various risk factors, symptoms and ages as recited in claims 2-8. Thus, the reference teachings anticipate the claimed invention. It is noted that claims 29-31 recite

12. Claims 4 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker et al., J. Of Neuropath. & Exp. Neurol., 53(4):377-83, 1994(a).

Walker et al., 1994 (a) teach in vivo labeling of cerebral amyloid with monoclonal antibody 10D5 in nonhuman primates. The anitbody is murine and interacts selectively to beta amyloid. The antibody is IgG1 kappa light chain and whole antibody or Fab fragments were administered at a dosage of 25 mg/kg im.

Walker et al., does not specifically teach administration in humans. However, Walker suggests that the methodology would be useful and desirable in patients with Alzheimer's disease, see in particular Discussion pp. 381-382. Thus, it would have been prima facie obvious given the positive results in nonhuman primates to employ the methodology in humans for similar in vivo imaging. One of skill in the art would expect positive results as demonstrated in primates, the most similar physiological paradigm to humans.

Status of Claims

13. No claims are allowed.

14. Any inquiry of a general nature or relating to the status of this general application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Papers relating to this application may be submitted to Technology Center 1600, Group 1640 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). Should applicant wish to FAX a response, the current FAX number for Group 1600 is (703) 308-4242.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharon L. Turner, Ph.D. whose telephone number is (703) 308-0056. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 6:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Kunz, can be reached at (703) 308-4623.

Sharon L. Turner, Ph.D.
June 18, 2001

CHRISTINE J. SAOUD
PRIMARY EXAMINER
Christine J. Saoud